

# SOUTHERN ILLINOIS UNIVERSITY EDWARDSVILLE

February 3, 2015

Dear Nominating Committee,

Thank you for this opportunity to potentially become a board member for the Citizen Science Association. I have been engaged in various aspects of citizen science research since I was an undergraduate working on variable star projects. I have worked to promote and improve all aspects of citizen science throughout my career; I have served on the board of the American Association of Variable Star Observers, I co-founded the Zooniverse project, and today I am director of the CosmoQuest virtual research center.

While citizen science has been around for as long as America, we are at a special turning point for professionalizing our community and working towards standards for engaging our citizen scientists in meaningful projects that are respectful of their intellectual contributions.

To directly answer your questions:

- What do you feel are the major concerns facing the citizen science community?  
The most simplistic definition of citizen science is an activity that engages citizens as collaborators in activities that yield novel science results. While this definition is simple, it is also frequently ignored. In the past couple of years, the term “citizen science” has become trendy, with many funding bodies and agencies encouraging the creation of citizen science projects. Unfortunately, many of the new projects either don’t actually produce science, or they do produce science but don’t fully acknowledge the citizens they engage. As a board member of the Citizen Science Association, I would want to work on creating basic standards for defining what citizen science is and is not, including supporting the continuation of research into defining the many different kinds of citizen science. I would also want to work to define standard language for acknowledging the intellectual property and contributions on their members.
- What skills and what types of experience would you bring to the CSA board?  
As I alluded to above, I have worked with citizen scientists in many different ways through my career. As an undergraduate at Michigan State University, I would watch as my advisor took visual observations for the American Association of Variable Star Observers while I manned the telescope. My eyes were never good enough to see the stars he was seeing, but I learned from him that everyday people (with eyes better than mine!) can make real contributions... and some of them can go on to become professors. As an early-career researcher, I went on to

collaborate with amateur astronomers to study the variable star AH Leo, and to sit on the board of directors for the American Association of Variable Star Observers. It was while attending a variable star meeting in the UK that I met Chris Lintott, and the two of us formulated plans that would lead to the launch of the Zooniverse in 2008. As part of Zooniverse, I ran a research team that studied the motivations and needs of citizen scientists. Based on our lessons learned, my team - in partnership with numerous NASA missions - launched the CosmoQuest virtual research facility. CosmoQuest has worked to collaborate with other citizen science projects, and to use our research to help build the citizen science community as a whole. As a public speaker, I regularly give talks that promote not just CosmoQuest, but many other projects from other fields. Today, CosmoQuest is working in partnership with the Globe to design protocols for studying needs and motivations of citizen scientists working in a wide-variety of areas. As a member of the Citizen Science Association, I would bring these experiences as a scientist and human-subject researcher, my lessons learned from working with three large citizen science programs, and my drive to build a broad, healthy, mutually supporting network of programs.

It is my sincere hope that I'll be able to work with the Citizen Science Association as a board member. I am proud of what you have already accomplished, and I hope I can be part of the great things I see coming in your future.

Sincerely,

A handwritten signature in dark ink, appearing to read 'P. L. Gay', with a stylized flourish at the end.

Dr. Pamela L. Gay  
Assistant Research Professor  
Director of CosmoQuest

## Dr. Pamela L. Gay

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### Education

- 2002 Ph.D. Astronomy, University of Texas, Austin, Texas
- 1998 M.A. Astronomy, University of Texas, Austin, Texas
- 1996 B.S. Astrophysics, Michigan State University, East Lansing, Michigan

### Academic Appointments

*non-academic work experience available upon request*

- 2010 – Assistant Research Professor, The STEM Center  
Southern Illinois University Edwardsville, Illinois
- 2008 – Executive Director  
Astrosphere New Media Association, Edwardsville, Illinois
- 2006 – 2010 Assistant Research Professor, Department of Physics  
Southern Illinois University Edwardsville, Illinois
- 2003 – 2006 Instructional Laboratory Associate, The Science Center  
Harvard University, Cambridge, Massachusetts

### Fellowships & Awards

- 2015 Communicator Award for “Productions – Podcast”, for 365 Days of Astronomy
- 2012 Outstanding Science Educator of the Year, St. Louis Academy of Sciences
- 2012 Researcher of the of Year, SIUE Chapter of Sigma Xi
- 2009 Parsec Award in the category, “Best Infotainment”, for 365 Days of Astronomy

### Synergistic Activities

- 2011 – Project Director, CosmoQuest Virtual Research Facility, [cosmoquest.org](http://cosmoquest.org)
- 2009 – Exec. Producer, 365 Days of Astronomy, [365daysofastronomy.org](http://365daysofastronomy.org)
- 2006 – co-Host, Project Manager, Astronomy Cast, [astronomycast.org](http://astronomycast.org)
- 2005 – 2006 co-Writer & Voice Talent, Slacker Astronomy

### Peer-Reviewed Citizen Science Related Research

- Robbins, S.J., I. Antonenko, M.R. Kirchoff, C.R. Chapman, C.I. Fassett, R.R. Herrick, K. Singer, M. Zanetti, C. Lehan, D. Huang, P. L. Gay. "The variability of crater identification among expert and community crater analysts." *Icarus* 234 (2014): 109-131. DOI. [10.1016/j.icarus.2014.02.022](https://doi.org/10.1016/j.icarus.2014.02.022)
- Raddick, M. Jordan, Georgia Bracey, Pamela L. Gay, Chris J. Lintott, Carie Cardamone, Phil Murray, Kevin Schawinski, Alexander S. Szalay, and Jan Vandenberg. "Galaxy Zoo: Motivations of Citizen Scientists." *Astronomy Education Review* 12, no. 1 (2013).
- Parker, A.H., M.W. Buie, D.J. Osip, S.D.J. Gwyn, M. J. Holman, D. M. Borncamp, J. R. Spencer, S. D. Benecchi, R. P. Binzel, F. E. DeMeo, S. Fabbro, C.I. Fuentes, Pamela L. Gay, J.J. Kavelaars, B. A. McLeod, J.-M. Petit, S.S. Sheppard, A.S. Stern, D.K. Tholen, D.E. Trilling, D.A. Ragozzine, L.H. Wasserman, the Ice Hunters. "2011 HM102: discovery of a high-inclination I5 Neptune trojan in the search for a post-pluto New Horizons target." *The Astronomical Journal* 145, no. 4 (2013): 96. DOI. [10.1088/0004-6256/145/4/96](https://doi.org/10.1088/0004-6256/145/4/96)

Tholen, D. J., C. Veillet, M. W. Buie, P. A. Wiegert, A. Boattini, M. Micheli, G. T. Elliott et al. [P. Gay is author 19 of 76]. "Minor Planet Observations [568 Mauna Kea]." *Minor Planet Circulars* 78794 (2012).

Keel, W. C., A. M. Manning, B. W. Holwerda, M. Mezzoprete, C. J. Lintott, K. Schawinski, P. Gay, and K. L. Masters. "Galaxy Zoo: A catalog of overlapping galaxy pairs (Keel+, 2013)." *VizieR Online Data Catalog* 612 (2013): 50002. DOI.

Keel, W.C., A.M. Manning, B.W. Holwerda, M. Mezzoprete, C.J. Lintott, K. Schawinski, P. Gay, and K.L. Masters. "Galaxy Zoo: a catalog of overlapping Galaxy Pairs for dust studies." *Publications of the Astronomical Society of the Pacific* 125, no. 923 (2013): 2-16. DOI. [10.1086/669233](https://doi.org/10.1086/669233)

Fuse, T., S. Miyazaki, J. R. Spencer, D. J. Tholen, F. Toshida, M. W. Buie, D. M. Borncamp, P.L. Gay, et al. [545 total authors] "2012 LT7= 2009 MH1." *Minor Planet Electronic Circulars* 1 (2012): 109.

Raddick, M. Jordan, Georgia Bracey, Pamela L. Gay, Chris J. Lintott, Phil Murray, Kevin Schawinski, Alexander S. Szalay, and Jan Vandenberg. "Galaxy zoo: Exploring the motivations of citizen science volunteers." *Astronomy Education Review* 9, no. 1 (2010): 010103.

Schawinski, K., D.A. Evans, S. Virani, C. M. Urry, W. C. Keel, P. Natarajan, C.J. Lintott, A. Manning, P. Coppi, S. Kaviraj, S.P. Bamford, G.I.G. Józsa, M. Garrett, H. van Arkel, P. Gay, and L. Fortson. "The sudden death of the nearest quasar." *The Astrophysical Journal Letters* 724, no. 1 (2010): L30. DOI. [10.1088/2041-8205/724/1/L30](https://doi.org/10.1088/2041-8205/724/1/L30)

## Crowd-Sourced Creative Works

Beatini, M., P.L. Gay, B. Keel, K. McCullough, M. Schoenberg, J. Thibeault & J. Thibeault. Hanny and the Mystery of the Vorwerp. Edwardsville, IL: Citizen Science Alliance, 2010. Print. (archived at hannysvoorwerp.zooniverse.org)

Lafferty, M. ed. Free Wifi on Mars. Edwardsville, IL: Astrosphere New Media Assoc., 2012. Print. (archived at freewifionmars.org)

## Citizen Science Grants

*Citizen science mission contracts, and other grants available upon request*

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|------------------------------------------------------------------------------------------------------|-------------------------|-----------------------|
| <b>CosmoQuest: A Virtual Research Facility for the Public</b> (Cooperative Agreement, Gay, P.L., PI) |                         |                       |
| NASA                                                                                                 | 01/04/2016 – 12/31/2020 | \$11,480,216          |
| <b>Guerilla Citizen Science</b> (P.L. Gay, PI)                                                       |                         |                       |
| NASA ROSES EPOESS NNX12AB92G S04                                                                     | 01/01/2012 – 12/31/2014 | \$898,796             |
| <b>Citizen Science with the Planet Pipeline</b> (P.L. Gay, PI)                                       |                         |                       |
| HST-EO-12142.07-A                                                                                    | 01/01/2010 – 12/31/2011 | \$49,284 <sup>4</sup> |
| <b>Giving Zooniverse a Face: A Citizen Science Facebook Application</b> (P.L. Gay, PI)               |                         |                       |
| NSF EAGER, AST 0958508                                                                               | 03/01/2010 – 02/28/2012 | \$97,678              |
| <b>Investigating Audience Engagement with Citizen Science</b> (Gay, P.L., P.I.)                      |                         |                       |
| NSF ISE, DRL 0917608                                                                                 | 09/01/2009 – 12/31/2012 | \$69,967 <sup>4</sup> |
| <b>The Universe Zoo : Citizen Science from the Moon to the Early Universe</b> (Gay, P.L., P.I.)      |                         |                       |
| NASA ROSES #NNX09AD34G                                                                               | 01/01/2009 – 06/30/2012 | \$543,924             |